

**EPSCoR Responses to Findings and Recommendations  
of the  
Committee of Visitors Report  
of  
August 24, 2009**

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SUBJECT: EPSCoR Responses to the FY 2009 Committee of Visitors Report

DATE: September 5, 2010

The OIA Committee of Visitors (COV) met August 11-12, 2009, at the National Science Foundation to review the EPSCoR program for the period FY 2005 – FY 2008. This review focused on:

- Integrity and efficiency of the program's processes and management practices, including quality and effectiveness of merit review processes, selection of reviewers, resulting portfolio of awards, and management of the program;
- Results of OIA EPSCoR investments in pursuit of Foundation strategic outcome goals of discovery, learning, and research infrastructure; and
- Other aspects of the program structure and management, including EPSCoR responsiveness to recommendations from previous COVs and other external evaluations.

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The report prepared by the COV reflects careful examination and insightful evaluation of the program. Dr. Willie Pearson, Jr., served as Chair of the COV and led its detailed analysis of 108 of the 1,483 actions taken during the period of review, including 96 awards and 12 declinations. This sample included essentially all of the Research Infrastructure Improvement (RII) actions, all of the Outreach and Workshop actions, and a representative set of Co-Funding actions.

EPSCoR is pleased with the COV's finding that progress made subsequent to the FY 2005 review "has been impressive and is a testimony to how serious the leadership is about continuous progress and improvement in the program itself and the service that the Foundation provides to the country overall." The Committee identified three key elements that prompted significant improvements in Program image, quality and overall management, namely (1) the respect for and responsiveness of the current leadership team; (2) the prompt and effective implementation of recommendations from the FY 2006 EPSCoR 2020 Workshop Report; and (3) EPSCoR's move from EHR to OD/OIA that affords greater internal visibility and credibility.

Of particular note are the Committee's findings of strong Program performance in merit review quality and integrity, strength and diversity of reviewers, thoroughness and clarity of documentation, quality of program staff, crispness of program focus, effective use of cyber tools, and overall transparency of EPSCoR processes. Also of note is the Committee's endorsement of the Program's Foundation-wide engagement of research directorates and offices that serves to strengthen EPSCoR's intellectual base and to integrate discovery and learning more effectively. The Committee acknowledged the Program's recognition of the uniqueness of opportunities for discovery, innovation, and workforce development within each jurisdiction. Further, the Committee applauded the Program's cognizance of economic development capacities and the need to link assessment and goal setting to the education and research opportunities that also strategically expand economic development.

The Committee of Visitors found no program areas in need of improvement or gaps within program areas. However, the Committee provided five specific recommendations for improving Program performance:

**COV: Tracking and Analyzing Longitudinal Outcome Data**

*"EPSCoR management is encouraged to continue to work with jurisdictions to track and analyze outcome data related to the success and retention of scientists, postdocs and students supported with EPSCoR funding, including those supported by grants that have been closed for some time."*

NSF EPSCoR strongly agrees that detailed data, captured in a uniform fashion over time, is essential to assessing the outputs and outcomes of EPSCoR investments, and to effective program management overall. To this end, in FY 2009, EPSCoR introduced mandatory, standardized data capture and reporting for RII Track-1 awards. Utilizing templates developed jointly with the EPSCoR community, RII Track-1 awardees provide, as an additional component of annual and final reports, qualitative and quantitative data reflecting highlights of notable accomplishments in research and education in science and engineering; publications, patents, and extramural funding; collaborations; faculty hires and departures; engagement of postdoctorals, graduate students, and undergraduates; diversity of participants and institutions; external engagement; and

cost sharing and cost contributions. EPSCoR is now undertaking a retrospective gleaning of comparable data from prior RII awards made over the last decade.

Development of longitudinal data reflecting the outputs and outcomes of EPSCoR co-funding since its formal initiation in FY 1998 will be undertaken in FY 2011. These data will provide insights into the impact of EPSCoR co-investments in disciplinary research and education programs throughout the Foundation as well as in cross-cutting programs with specific target audiences such as CAREER and IGERT, as well as collaborative pursuits.

**COV: Systematic Documentation of Post-Panel Input to Merit Review Process**

*“The COV recommends that EPSCoR use a systematic method or approach to document the assessment of PI responses to reviewer concerns, particularly in cases where the review panel does not strongly support funding a proposal but EPSCoR management decides to fund.”*

Review of EPSCoR RII proposals is a multi-stage process. Initially, a panel of the whole is assembled with expertise in all areas of science and engineering contained in the proposals under consideration. In addition to depth in science and engineering, this panel must also bring to the merit review process expertise in all of the elements required of RII proposals. Members of this panel prepare and submit preliminary reviews of proposals prior to coming together for full discussion of these requests, and finalization of their individual reviews and overall panel recommendations. These recommendations fall into three categories: ‘Fund’, ‘Do Not Fund’, and ‘Fund If’ issues identified in the panel review are appropriately addressed by the principal investigator through post-panel correspondence between NSF EPSCoR and the PI. The placement by the panel of proposals in these three categories reflects unanimous concurrence by all panel members, and conveys to NSF EPSCoR the responsibility for judging the appropriateness and adequacy of PI responses to reviewer concerns.

To mitigate the need for post-panel clarification, EPSCoR began, in FY 2008, to include more explicit language detailing expectations for each program element called for in RII solicitations. Similarly, more explicit language was incorporated into RII solicitations in guidance to PIs and in descriptions of program-specific review criteria.

These actions resulted in reduction in the need for post-panel clarifications. Because of increases in the scope and complexity of RII proposals in FY 2008 and FY 2009, together with strict page limitations on individual proposal elements, the need for post-panel clarification is still necessary in some cases. To aid in uniformity of process and in equity in decision-making, standardized formats for query and response have been implemented. Both design of queries and evaluation of responses now benefit markedly from input by scientists and engineers in relevant disciplinary directorates and offices of the Foundation.

**COV: Reviewer Ratings and Actions on Proposals**

*“The COV commends the EPSCoR program for using well known, high quality reviewers from both EPSCoR jurisdictions and non-EPSCoR states. Usually, most reviewers are familiar with success rates in the research directorates as well as the type of review scores commonly associated with funding recommendations. Some members of the COV were concerned that reviewers might be somewhat put off upon learning that proposals were funded that had received relatively low review scores from the review panel on which they served. If so, this could serve to dampen the credibility of the EPSCoR program among the non-EPSCoR jurisdictional reviewer community. The COV recommends that EPSCoR management keep these concerns in mind when making a decision to fund a proposal that the original panel did not strongly support.”*

EPSCoR notes the Committee’s acknowledgement of the Program’s move toward using more and more well-known reviewers for RII proposals. This practice strengthens the intellectual base of NSF EPSCoR activities, broadens awareness of EPSCoR and its purpose, and provides more informed perspectives that enrich feedback to both the EPSCoR community and the Foundation. While these reviewers are intimately familiar with programs within the directorates and offices of the Foundation, they often have limited experience with the goals and objectives of EPSCoR.

To better prepare such individuals to review RII proposals, NSF has the responsibility to ensure that all reviewers fully understand EPSCoR goals and objectives, and its strategies of building research capacity in EPSCoR jurisdictions through strengthening research infrastructure. In FY 2011, EPSCoR will initiate a comprehensive approach to reviewer preparation that will begin with dialogue at the time of panelist recruitment, followed by pre-panel webinars, and culminating with a more extensive panel charge. These steps will address issues including RII program breadth and its state-based character, RII merit review in NSF-wide context, and the insidious nature of implicit bias. Utilization of more and more well-known reviewers who are fully prepared to address all aspects of RII proposals will help to ensure that funding decisions are based on *‘Science First’* rather than *‘Science Only.’*

**COV: Mechanisms to Increase Effective Collaborations**

*“Collaboration among scientists from EPSCoR and non-EPSCoR jurisdictions can leverage the scientific impact of EPSCoR investments as well as potentially create a better understanding of the quality of science in EPSCoR jurisdictions. . . .The co-funding mechanism appears to be an attractive mechanism to facilitate collaborations among researchers from EPSCoR and non-EPSCoR jurisdictions because it can increase the probability of success of collaborative proposals by leveraging regular NSF program funds with support for the EPSCoR side of the collaboration. Such use of co-funding already occurs, and the COV recommends that EPSCoR management work to highlight this aspect of co-funding. EPSCoR management may also wish to consider working with the EPSCoR community to*

*develop other mechanisms to foster collaborations among researchers from EPSCoR and non-EPSCoR jurisdictions.”*

EPSCoR agrees fully with the Committee’s observations regarding effective collaborations, particularly those that span traditional organizational and geographical boundaries. These collaborations can increase research capacity of jurisdictions, consortia, or regions to enable stronger competitiveness in large scale and cross-cutting competitions. Collaborations can provide effective platforms for discovery-based science and engineering, for broadening participation, for workforce development, for strengthening cyberinfrastructure, for extending and enhancing external engagement, and for developing and sustaining research competitiveness more broadly. The development of mechanisms to foster collaborations among EPSCoR and non-EPSCoR jurisdictions has been discussed within NSF EPSCoR as well as within the EPSCoR community. The FY 2005 COV report endorses this concept but cautions against pitfalls arising from lack of transparency of the intent and implications of such initiatives.

Experiences of EPSCoR jurisdictions in RII Track-2 collaborations have shown the benefits of inter-jurisdictional cooperation and have led to broader acceptance of the practice. Broadening the scope of such collaborations among EPSCoR scientists and engineers to include their non-EPSCoR colleagues is a logical next step. EPSCoR support of collaborative research projects accounts for ~11% of the annual co-funding budget. While the majority of that investment is in collaborations among EPSCoR jurisdictions, there is significant growth in collaborations among EPSCoR and non-EPSCoR jurisdictions. This growth is projected to continue as the complexity of challenges to technological and economic development at jurisdictional, regional, and national levels increases. The EPSCoR community’s growing focus on issues such as energy, water, environment, climate, and natural disasters speaks to this. To seed the development of broad-based collaborative approaches to the science and engineering undergirding these issues, EPSCoR will expand its investment in workshops that meld expertise from EPSCoR and non-EPSCoR jurisdictions, and that engage the programmatic perspectives of the Foundation’s disciplinary directorates and offices.

**COV: Recognizing ‘Transformative’**

*“The COV feels that it is important to recognize that what is transformative should be determined by particular characteristics of a given jurisdiction, instead of universal criteria.”*

EPSCoR agrees with the Committee’s position that ‘transformative’ is a place-based characteristic. That which is transformative in a given setting in a particular jurisdiction may not be transformative in others. Experience has shown that the largest incremental benefit of investment in the research infrastructure of a given jurisdiction derives from where the jurisdiction is in its research competitiveness and its preparedness to move forward from that juncture. These two factors are critically coupled to the jurisdiction’s

Science and Technology (S&T) Plan, its S&T business plan, its governing committee, and the intellectual merit and broader impacts of its research programs.

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